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**ASSESSING ALTERNATIVE MILITARY FAMILY
HOUSING ASSIGNMENT POLICIES**

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Government Accounting Office (GAO), in a 1979 report, recommended that priority for assignment to military family housing be given to personnel who can least afford to live off base (E-1--E-3). The purpose of this effort was to evaluate modifications to the current DoD family housing assignment policy that address GAO's criticism. Central to the evaluation is a computer program, the Housing Assignment Policy (HAP) model, that assesses the impact of a change in assignment policy by		

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simulating the effects of a specific set of priorities or rules. The number, type (pay grade), and location of personnel affected, as well as the associated changes in budgetary costs, specifically basic allowance for quarters (BAQ), were derived for numerous scenarios and compared. Although changes in housing policy would affect morale and retention, such effects are difficult to measure and were not included in this work.

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FOREWORD

This research and development was conducted under work request 80827 from the Department of Defense, Family Housing System Office (FHSO).

This report provides an assessment of several alternative policies for assigning military members with dependents to on-base family housing units. The approach and rationale for the effort cover points raised in a General Accounting Office report issued in 1979.

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SUMMARY

Problem

A Government Accounting Office (GAO) report issued in 1979 recommended that priority for assignment to military family housing be given to personnel who can least afford to live in the civilian community. This referred specifically to enlisted members in pay grades E-1 through E-3, a group currently ineligible for family housing. DoD's Family Housing System Office (FHSO) was interested in determining how such policy changes might redistribute housing resources among personnel, increase housing allowance budget outlays, and affect morale and retention.

Objective

The objective of this effort was to evaluate modifications to the current L&D family housing assignment policy that address GAO's criticism. Central to the evaluation is a computer program, the housing assignment policy model (HAP), that assesses the impact of a change in assignment policy by simulating the effects of a specific set of assignment priorities or rules.

Approach

Military family housing is declared either adequate or substandard and is designated for particular pay grade groups, who receive highest priority for their own housing. The HAP program divided the available military housing into distinct categories (units that were available (Group I) or not available (Group II) to current eligibles), and varied the assignment priorities in those categories to allow more eligibles to be housed. For each pay grade group, the number of personnel that would be housed under a new policy was compared with the number currently housed.

Seven policies--Baselines I and II and Scenarios I through V--were evaluated. These policies ranged from small changes to significant adjustments in current housing priorities. Baselines I and II gave eligibles exclusive priority for substandard units, while assigning adequate units according to existing rules. Scenarios I and II set aside specified proportions of various adequate housing categories for which eligibles have highest priority. Finally, Scenarios III through V assessed the effects of an "exodus" of higher grade personnel to civilian housing in response to variable housing allowance (VHA) payments.

It is likely that changes in housing policy will affect the morale and retention of personnel. However, since such effects are extremely difficult to measure, they were not included in this effort.

Findings

1. Attempts to house all of the current eligibles would be successful only at the expense of large numbers of displaced enlisted personnel at pay grade levels E-4 through E-6. However, with certain changes in assignment policy, substantially more eligibles can be housed with little impact on other pay grade groups.

2. Scenarios I and II, which allocate specified proportions of adequate housing to eligibles, tend to displace E-4s through E-6s first. However, the E-4 through E-6 share of housing supply is increased under Scenarios III through V, when VHA payments lure increasing numbers of higher ranking personnel from on-base housing.

3. When higher grade personnel are displaced by former ineligible, the budget outlay for basic allowance for quarters (BAQ) increases. This occurs because relatively inexpensive BAQ recipients are moving on base (foregoing BAQ), while more expensive BAQ recipients are forced to live off base (and hence receive BAQ payments).

Conclusion

The occupancy rate of military family housing is nearly 100 percent. Thus, any housing assignment policy that attempts to house currently excluded personnel leads to the displacement of some currently housed personnel and is more expensive.

Recommendations

It is recommended that the FHSO use the results of this effort to evaluate potential changes in the family housing assignment policy. No follow-on work is planned.

CONTENTS

	Page
INTRODUCTION	1
Problem	1
Objective	1
APPROACH	1
Housing Supply and Demand	1
Assignment Policies Evaluated	3
Budgetary Impact	3
RESULTS	4
Baseline Policies	4
Policies Allocating Specific Portions of Housing to Ineligibles	4
Policies Assessing the Impact of VHA	6
Budgetary Consequences of Alternative Assignment Policies	6
CONCLUSIONS.	12
RECOMMENDATIONS.	12

LIST OF TABLES

	Page
1. Family Housing Pay Grade Groupings	2
2. Actual FY80 Housing Levels and Estimated Baseline I and II Levels (All-services).	4
3. Estimated Increase in FY80 BAQ/VHA Budget Associated with Alternative Assignment Policies	11

LIST OF FIGURES

1. Estimated housing levels realized under Scenario I.	5
2. Estimated housing levels realized under Scenario II	7
3. Estimated housing levels realized under Scenario III	8
4. Estimated housing levels realized under Scenario IV	9
5. Estimated housing levels realized under Scenario V	10
6. Maximum number of ineligibles housed by policy scenario.	11

INTRODUCTION

Problem

A Government Accounting Office (GAO) report published in 1979 recommended that the eligibility for assignment to military family housing be extended to all military families, with priority being given to personnel who can least afford to live in the civilian community.¹ GAO was referring particularly to enlisted members in pay grades E-1 through E-3, a group currently ineligible for family housing.

GAO maintained that the Department of Defense's (DoD's) on-base housing assignment policy is not consistent with the principal objective of its Family Housing Program--to assure that service members with dependents are suitably housed. It argued that, "although communities can generally provide suitable housing for higher graded personnel, who can either buy homes or pay the prevailing rental costs, the military generally constructs and assigns on-base housing to those families and fails to provide suitable housing for lower-graded personnel who can least afford to live in the community." (p. 1)

DoD's Family Housing System Office (FHSO) was interested in how such policy changes might redistribute housing among pay grades, increase housing allowance budget obligations, and affect the morale and the retention of those adversely affected by the new policy.

Objective

The objective of this effort, which was undertaken at the request of FHSO, was to evaluate modifications to the current DoD family housing assignment policy that address GAO's criticism. The policy changes, supplied by FHSO, were intended to set aside housing for and/or give assignment priority to those personnel who can least afford to live off base. Central to the evaluation was a computer program, the Housing Assignment Policy (HAP) model, that assessed the impact of a change in assignment policy by simulating the effects of a specific set of assignment priorities or rules.

APPROACH

Housing Supply and Demand

The HAP program used a desired assignment policy (a set of priorities) to match the demand for family housing at each DoD installation to the available supply. The supply of on-base housing at each DoD installation was considered as a given or as fixed.² It is described by the number of units in various bedroom categories, the proportion of those units considered to be substandard or inadequate, and the pay grade category for which the units were intended. The pay grade groupings, as defined for purposes of this study, appear in Table 1.

¹Government Accounting Office, Lower graded military personnel with families are not suitably housed but should be. Washington, DC: 25 September 1979.

²Housing supply data was obtained from DoD Form DD1411 dated March 1980 for Navy and Marine Corps installations, and March 1979 for the Army and Air Force. The analysis was restricted to CONUS installations.

Table 1
Family Housing Pay Grade Groupings

Group	Pay Grades
Ineligibles	E-1--E-3
Junior enlisted	E-4--E-6
Senior enlisted	E-7--E-9
Company grade officers	W-1--W-4; O-1--O-3
Senior officers	O-4--O-6

The demand for housing depends on (1) the number of personnel who require on-board housing because of military necessity ("key and essential" personnel), and (2) the number who are "qualified for" and "interested in" obtaining on-base housing. "Key and essential" personnel were treated as a fixed proportion of each pay grade at each installation. A inventory of the "qualified" and "interested" population was prepared for calendar year 1980 by the Defense Manpower Data Center (DMDC). These data were organized by service and military housing area (MHA), a cluster of contiguous counties with similar housing costs, which required matching each installation to its associated MHA. Most MHAs include only one base from each service. In MHAs housing more than one base, personnel from each service living off base were proportioned to the installations, based on the relative sizes of their on-base housing populations.

Initially, it was assumed that the "qualified" and "interested" population included all personnel currently assigned to family housing, as well as those with dependents living off base. However, it was not realistic to assume that all personnel living off base would be interested in on-base housing. Further, that portion not interested may well vary over time as a result of changes in tastes, the cost of civilian housing, or the availability of supplements such as the variable housing allowance (VHA), which was implemented in FY81, largely to make off-base housing more affordable to military members. To accommodate this variable, the HAP model permits the user to specify the portion of each pay grade group to be considered for assignment.

For purposes of describing assignment policies, the available supply of on-base housing was divided into three groups:

1. Group I represents housing for which current ineligibles will be eligible for assignment under a new policy. In some cases, Group I was limited to housing designated for junior enlisted (E-4--E-6) personnel. In others, it included all enlisted (E-4--E-9) housing, or even all enlisted housing plus quarters for company grade officers (W-1--W-4, O-1--O-3).
2. Group II, the complement of Group I, represents housing from which ineligibles were excluded.
3. Group III represents the fraction of units in Group I for which ineligibles have the highest assignment priority.

Assignment Policies Evaluated

The FHSO provided a set of housing assignment policies to be evaluated relative to FY80 housing levels. Each policy was defined in terms of the housing supply (Groups I, II, or III), size of the population to be assigned, and the priorities for assigning them. For each policy evaluated, the number of personnel housed, by pay grade group, was computed for each installation and contrasted to current housing levels.

Initially, two alternative policies, called Baseline I and II, which differ only slightly from the current assignment policy, were examined to test the HAP model's ability to duplicate current housing levels. Baseline I permits current ineligible to occupy enlisted housing but gives them lowest priority. However, they do receive exclusive priority for substandard housing. Baseline II allows ineligible to occupy company grade officer (W-1--W-4, O1--O3) units, in addition to all enlisted-designated housing (again, with the lowest priority). Like Baseline I, only ineligible are assigned to substandard units. In both alternatives, Group II housing (units from which ineligible are excluded) is assigned to officers by grade in descending order, and Group I housing is assigned first to senior enlisted (E-7--E-9), followed by company grade officers not previously assigned and junior enlisted (E-4--E-6). Ineligibles are housed only when units remain after all other groups have been accommodated.

Using Baseline I and II as starting points, the FHSO developed two housing assignment policies, Scenario I and Scenario II. Under these policies, ineligible would have the highest priority for assignment to various amounts of Group I housing. Any housing set aside for but not used by ineligible would be offered first to junior enlisted and then to company grade officers. In Scenario I, the Group I housing set aside for ineligible was limited to that originally intended for junior enlisted. In Scenario II, the Group I housing set aside for ineligible also includes that originally designated for company grade officers.

Finally, FHSO developed three policies--Scenarios III, IV, and V--to evaluate the effects of the VHA. Under Scenario III, it was assumed that 10, 20, 30, or 50 percent of personnel currently housed in senior enlisted and company grade officer units would choose to move off base. As in Baseline II, ineligible were permitted to occupy all enlisted and company grade officer quarters but were given the lowest priority for those units. Under Scenarios IV and V, it was assumed that only the senior enlisted (E-7--E-9) and senior officer (O-4--O-6) personnel would desire to move off base. Under Scenario IV, 30 percent of all enlisted (E-4--E-9) and company grade officer housing (Group I) is set aside for ineligible, compared to 50 percent under Scenario V.

Budgetary Impact

Policies that assign currently ineligible personnel to on-base housing imply that some higher grade personnel are likely to be displaced. This would result in an increase in the outlay for basic allowance for quarters (BAQ) and VHA, since relatively inexpensive BAQ recipients move on base (foregoing BAQ/VHA), while more expensive BAQ/VHA personnel are forced to live off base (and hence receive BAQ/VHA payments).

To address the budgetary impact of an assignment policy change, the HAP model multiplied the new off-base population (by pay grade) by their respective BAQ rates and VHA multipliers. Because pay grades within a pay grade group do not receive the same BAQ rate, a weighted average BAQ was derived for each MHA. The proportion of personnel drawing BAQ at the "with dependents" rate served as the weights. BAQ rates and their VHA multipliers as of October 1980 were used.

RESULTS

Baseline Policies

Table 2 displays, for all DoD, actual FY80 housing levels based on current policy and those resulting from Baseline I and II policies. As shown, above the grade of E-6, levels resulting from using the Baseline policies are virtually the same as that resulting from the current policies. Fewer junior enlisted (E-4--E-6) are housed because they are displaced from substandard housing. Although nearly twice as many ineligible are housed, the majority of the housing units to which they are assigned are substandard.

Table 2

Actual FY80 Housing Levels and Estimated Baseline I and II Levels (All services)

Item	E-1--E-3	E-4--E-6	E-7--E-9	W-1--O-3	O-4--O-6	Total
Number eligible for housing	90,292	385,172	105,149	86,890	68,148	735,651

Levels Using Current Policy						
Number Housed	11,635	146,511	38,436	31,686	17,182	245,450
% Housed	12.9	38.0	36.6	36.5	25.2	33.4

Levels Using Baseline I						
Number Housed	21,900	136,646	38,432	31,997	16,841	245,816
% Housed	24.3	35.5	36.6	36.8	24.7	33.4

Levels Using Baseline II						
Number Housed	21,900	136,646	38,827	31,602	16,841	245,816
% Housed	24.3	35.5	36.9	36.4	24.7	33.4

Policies Allocating Specific Portions of Housing to Ineligibles

The effects of Scenario I and II policies are illustrated in Figures 1 and 2 respectively. As shown in Figure 1, when less than 75 percent of Group I housing is set aside for ineligibles, they tend to replace junior enlisted roughly one-for-one, while senior enlisted personnel are virtually unaffected. However, when between 75 and 100 percent of Group I housing is allocated to ineligibles, junior enlisted begin to regain some units. This seeming inconsistency occurs because, at an increasing number of installations, the number of housing units set aside for ineligibles begins to exceed the number of ineligibles to be housed. The excess units are then assigned to junior enlisted. However, many of the units now assigned to junior enlisted had previously been assigned to senior enlisted.

In Scenario II, where company grade officer housing is included in the units made available to ineligibles, the junior enlisted "recovery" occurs at smaller set-aside rates

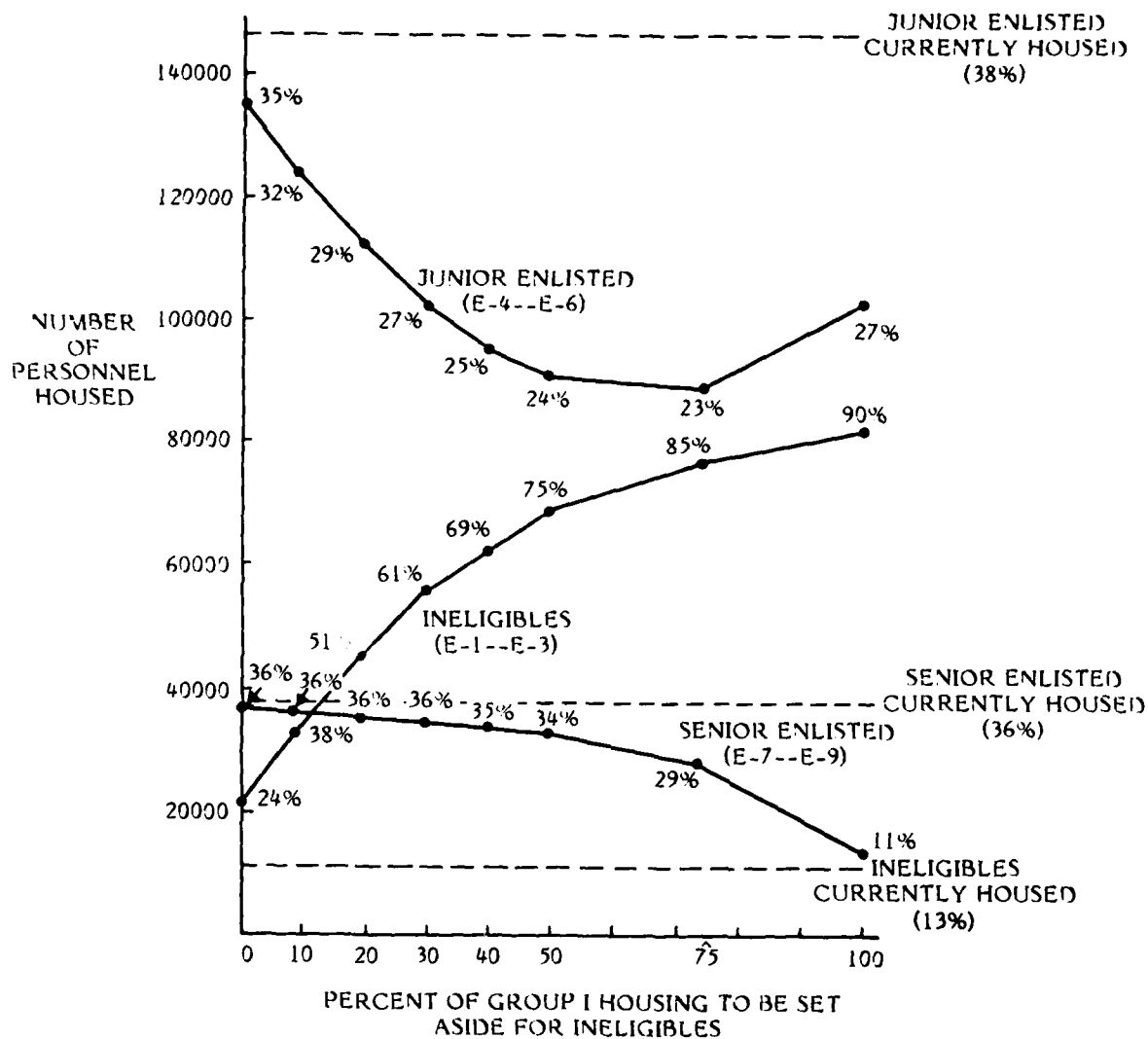


Figure 1. Estimated housing levels realized under Scenario I.

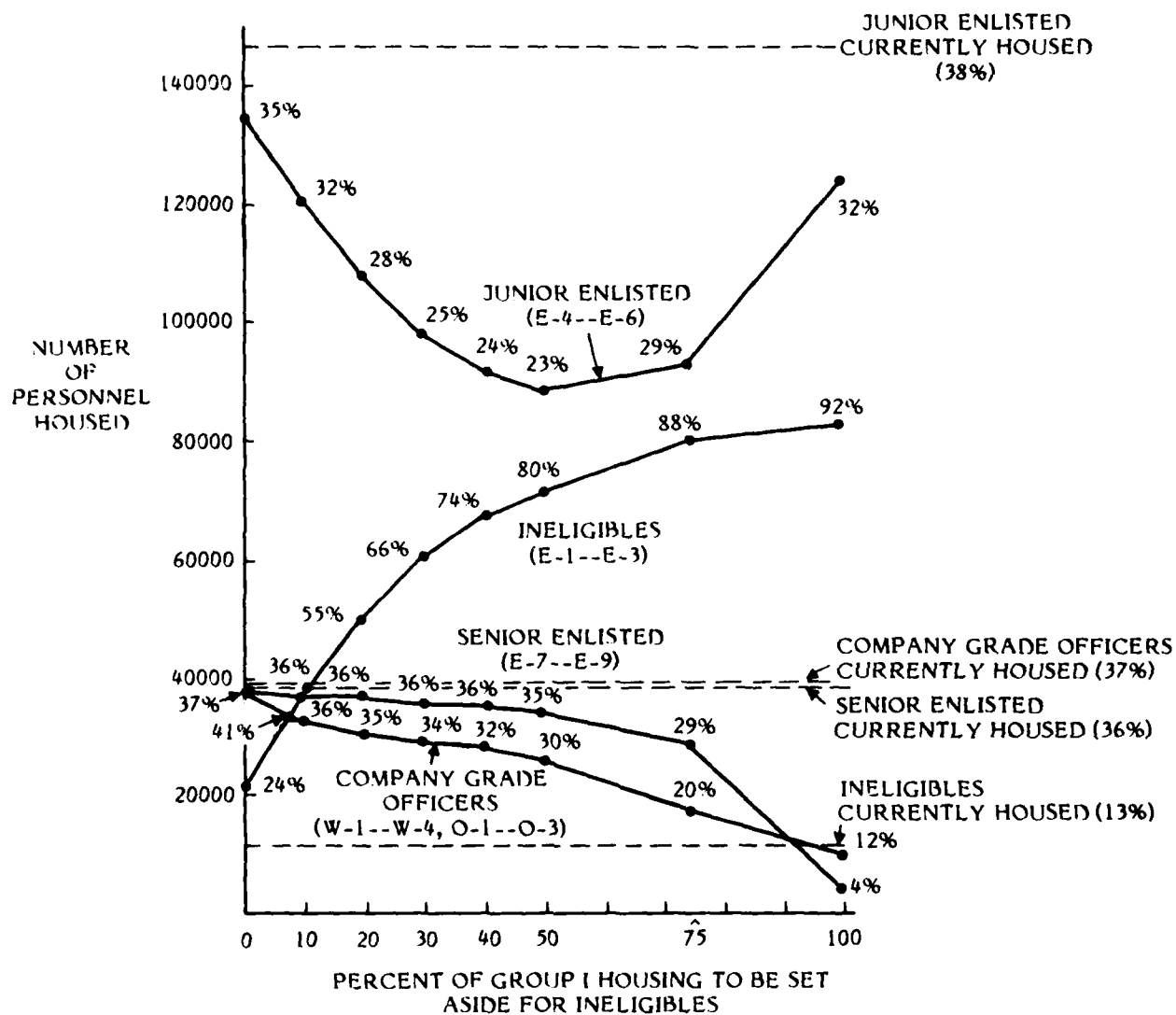


Figure 2. Estimated housing levels realized under Scenario II.

and is more pronounced. As shown in Figure 2, when 30 percent or more of Group I housing is designated specifically for ineligible, both junior enlisted and company grade officers are replaced. Approximately the same number of ineligible is housed as in Scenario I. However, since more housing is available to ineligible, there are more units available for assignment to junior enlisted. As shown, even when 50 percent of Group I housing is designated specifically for ineligible, junior enlisted begin to regain lost units.

The 100 percent set-aside category in Scenario II represents an attempt to house virtually all ineligible and as many junior enlisted as is practical. Only senior officers (Group II housing) are not affected. Under this category, over 90 percent of all ineligible are housed but over 23,000 junior enlisted are displaced. This loss could be halved if junior enlisted were permitted to occupy substandard units. Moreover, under the 100 percent category, nearly 88 percent of the senior enlisted and 68 percent of the company grade officers would no longer be assigned units.

Policies Assessing the Impact of VHA

The effects of Scenarios III, IV, and V are shown in Figures 3, 4, and 5 respectively. As shown, under Scenario III, which assumed that various percentages of currently housed senior enlisted and company grade officers elect to move off base, the number of ineligible housed doubled. Although junior enlisted lose their share of substandard units, they are able to maintain their overall housing share if between 10 and 20 percent of the senior enlisted and company grade officers elect to move off base.

Under Scenario IV, which sets aside 30 percent of all Group I housing for ineligible, only about 66 percent of the ineligible are housed, compared to about 80 percent for Scenario V. Even when 50 percent of the senior officer and enlisted pay grade groups leave on-base units, this group remains significantly below their current housing level. To house junior enlisted at their present level, it would also require that only 10 percent of Group I housing be set aside for ineligible. Even so, under this plan, over 40 percent of ineligible would be housed, compared to 13 percent currently.

Figure 6 summarizes the maximum number of ineligible that can be accommodated under each policy scenario. Scenarios I and II house the largest number of ineligible, but with the greatest displacement of higher grade personnel.

Budgetary Consequences of Alternative Assignment Policies

With a limited supply of on-base housing, the more ineligible assigned, the greater the number of higher grade personnel displaced. Because higher grade personnel receive larger BAQ/VHA payments, such assignment policies would also be more expensive. All policies evaluated were marginally more expensive than the current policy in terms of the BAQ/VHA outlay. Table 3 shows the net increase in the FY80 BAQ/VHA cost implied by each scenario.

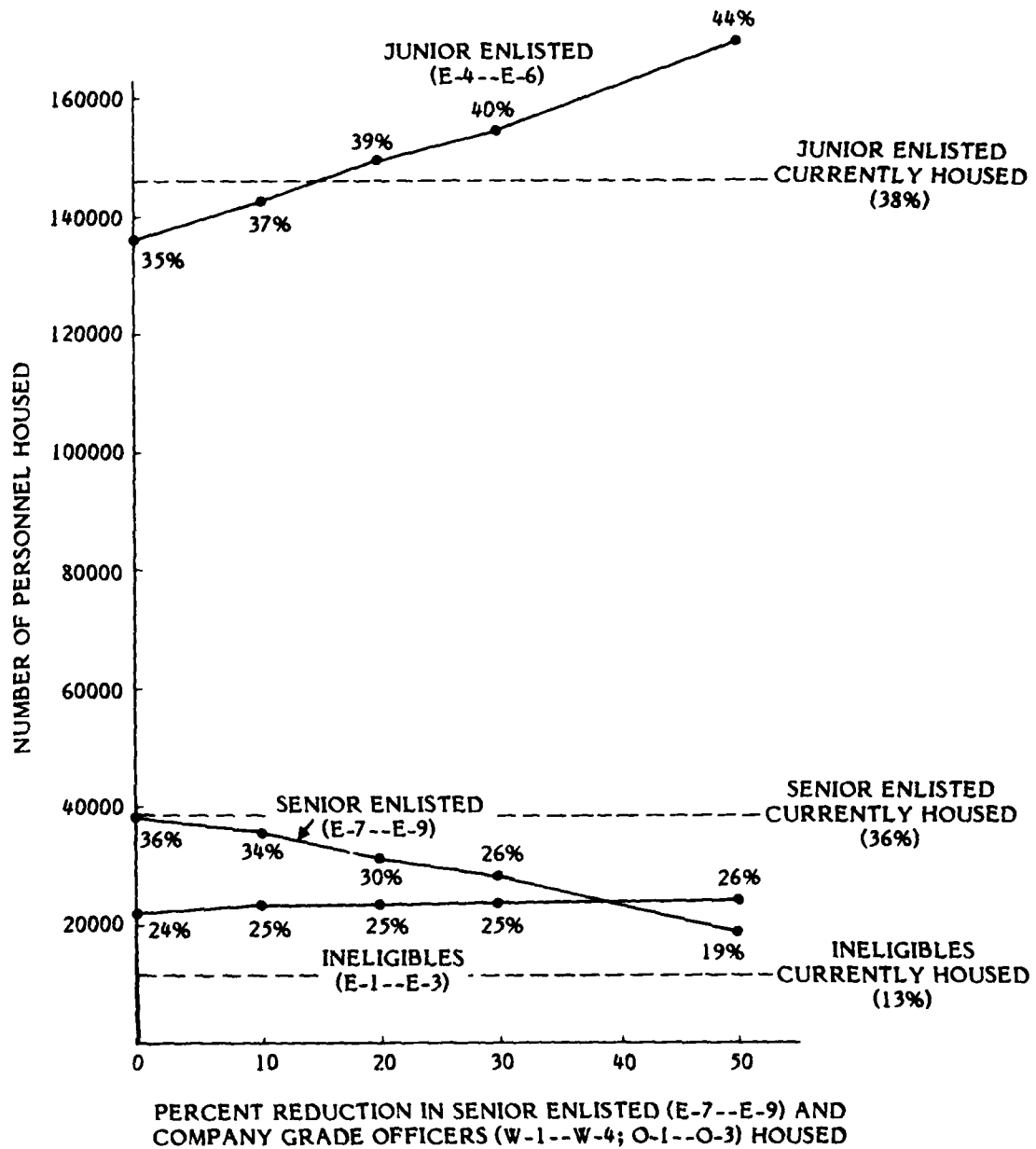


Figure 3. Estimated housing levels realized under Scenario III.

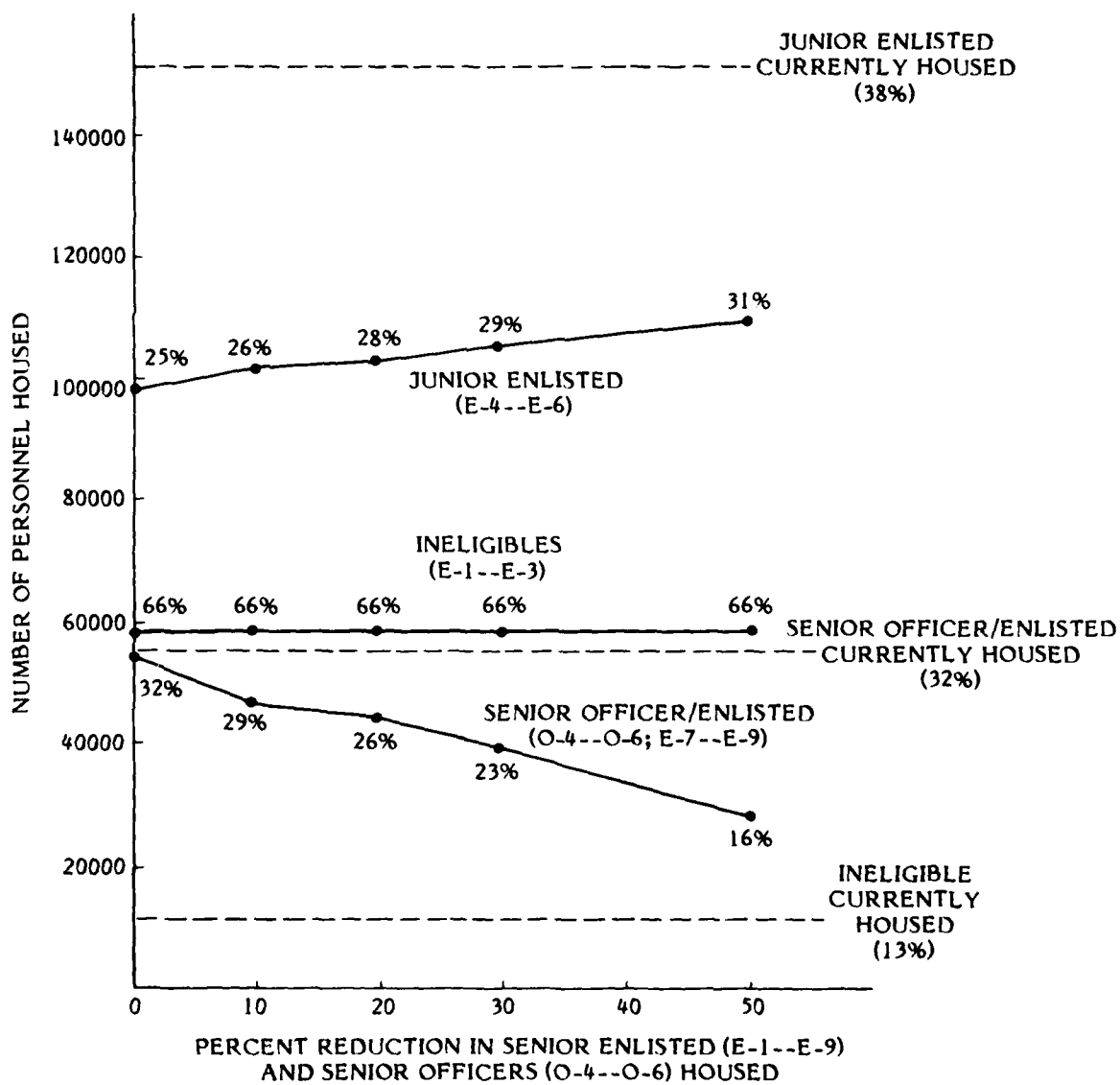


Figure 4. Estimated housing levels realized under Scenario IV.

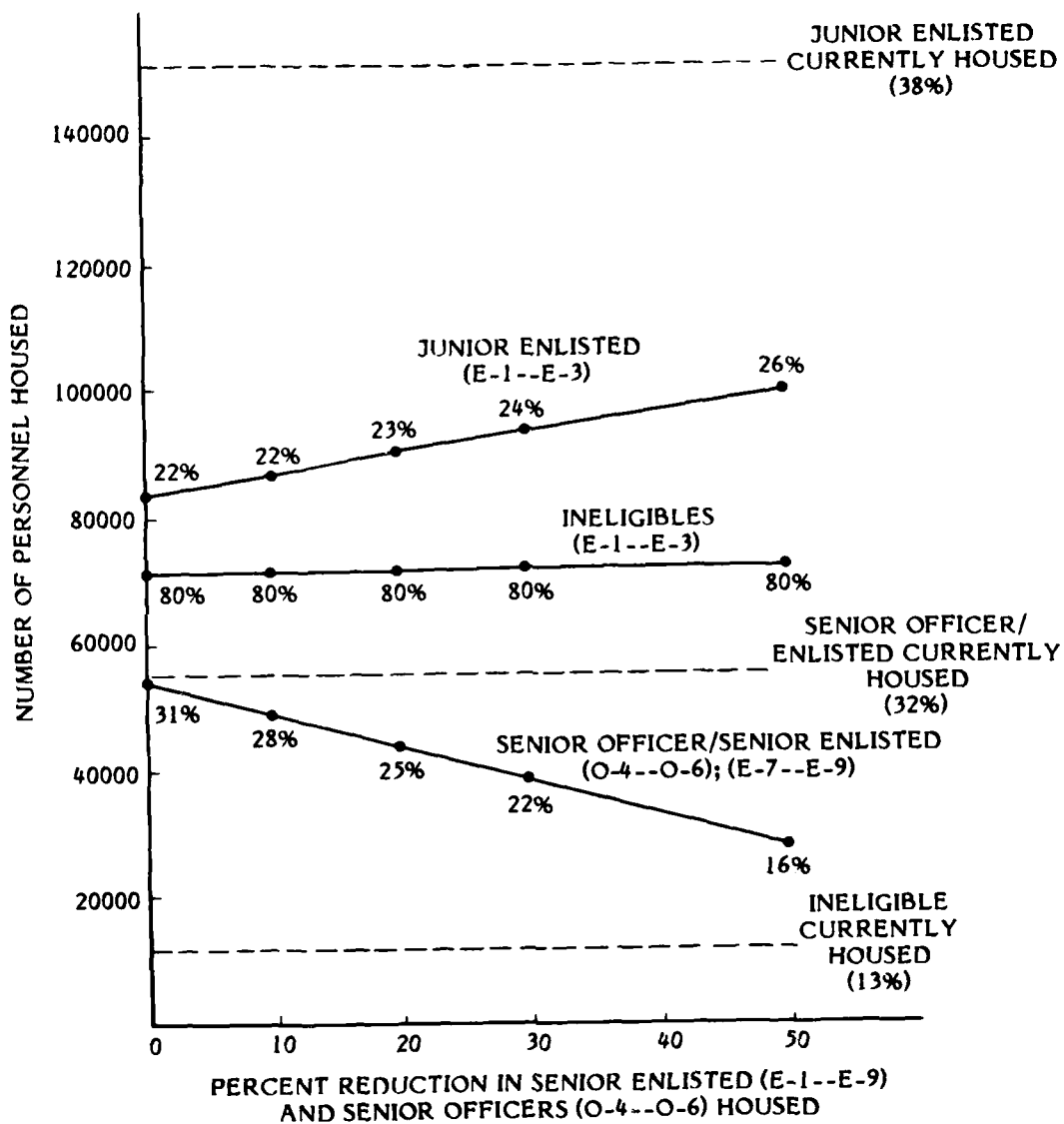


Figure 5. Estimated housing levels realized under Scenario V.

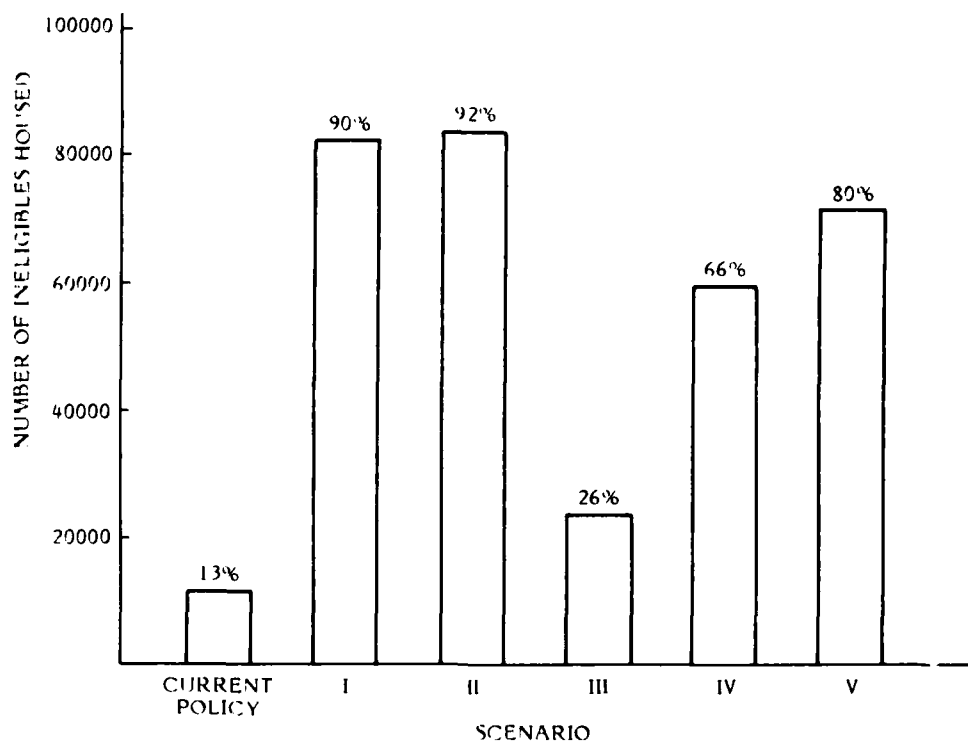


Figure 6. Maximum number of ineligible persons housed by policy scenario

Table 3

Estimated Increase in FY80 BAQ/VHA Budget Associated
With Alternative Assignment Policies
(Millions of Dollars)

Percentage ^a	SCENARIO				
	I	II	III	IV	V
0	5.3	5.2	5.2	42.6	57.4
10	15.4	17.5	12.0	63.6	49.6
20	26.0	30.1	19.8	57.5	70.4
30	36.1	42.6	26.8	60.0	77.7
40	46.0	53.8	--	--	--
50	53.3	63.5	43.4	83.2	92.9
75	76.0	89.9	--	--	--
100	103.6	133.0	--	--	--

^aThe percentages listed in this column have different meanings for the different scenarios. In Scenarios I and II, they represent the percent of Group I housing set aside for Ineligibles. In Scenarios III through V, they represent the percent of certain pay groups that are displaced (see text for further details).

CONCLUSIONS

The occupancy rates of military family housing units are nearly 100 percent. Thus, any housing assignment policy that attempts to house currently ineligible personnel leads to the displacement of some currently housed personnel and is more expensive. For any particular policy, the greater the number of currently housed personnel who voluntarily elect to move off base (e.g., in response to VHA), the less the displacement. However, when more senior personnel are displaced in favor of more junior personnel, a larger BAQ/VHA budgeting outlay results.

Significant changes in housing assignment policy, accompanied by assignment and displacements like those described above, are likely to have some impact on the morale and retention of those personnel both positively and adversely affected. However, since that impact is extremely difficult to capture and quantify, no attempt was made in this effort to assess it.

RECOMMENDATIONS

It is recommended that the FHSO use the results of this effort to evaluate potential changes in the family housing assignment policy. No follow-on work is planned.